

General Disclaimer

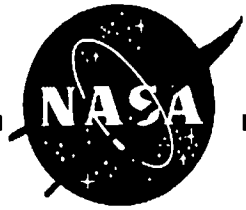
One or more of the Following Statements may affect this Document

- This document has been reproduced from the best copy furnished by the organizational source. It is being released in the interest of making available as much information as possible.
- This document may contain data, which exceeds the sheet parameters. It was furnished in this condition by the organizational source and is the best copy available.
- This document may contain tone-on-tone or color graphs, charts and/or pictures, which have been reproduced in black and white.
- This document is paginated as submitted by the original source.
- Portions of this document are not fully legible due to the historical nature of some of the material. However, it is the best reproduction available from the original submission.

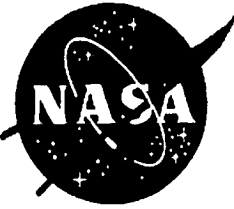


LAUNCH SERVICES PROGRAM

Portable Lightning Detection System



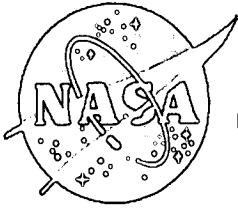
- Overview
- System Schematic
- Installation
- SOLLO Requirements
- TVM Requirements
- Computer Requirements
- Remote Connectivity



Overview

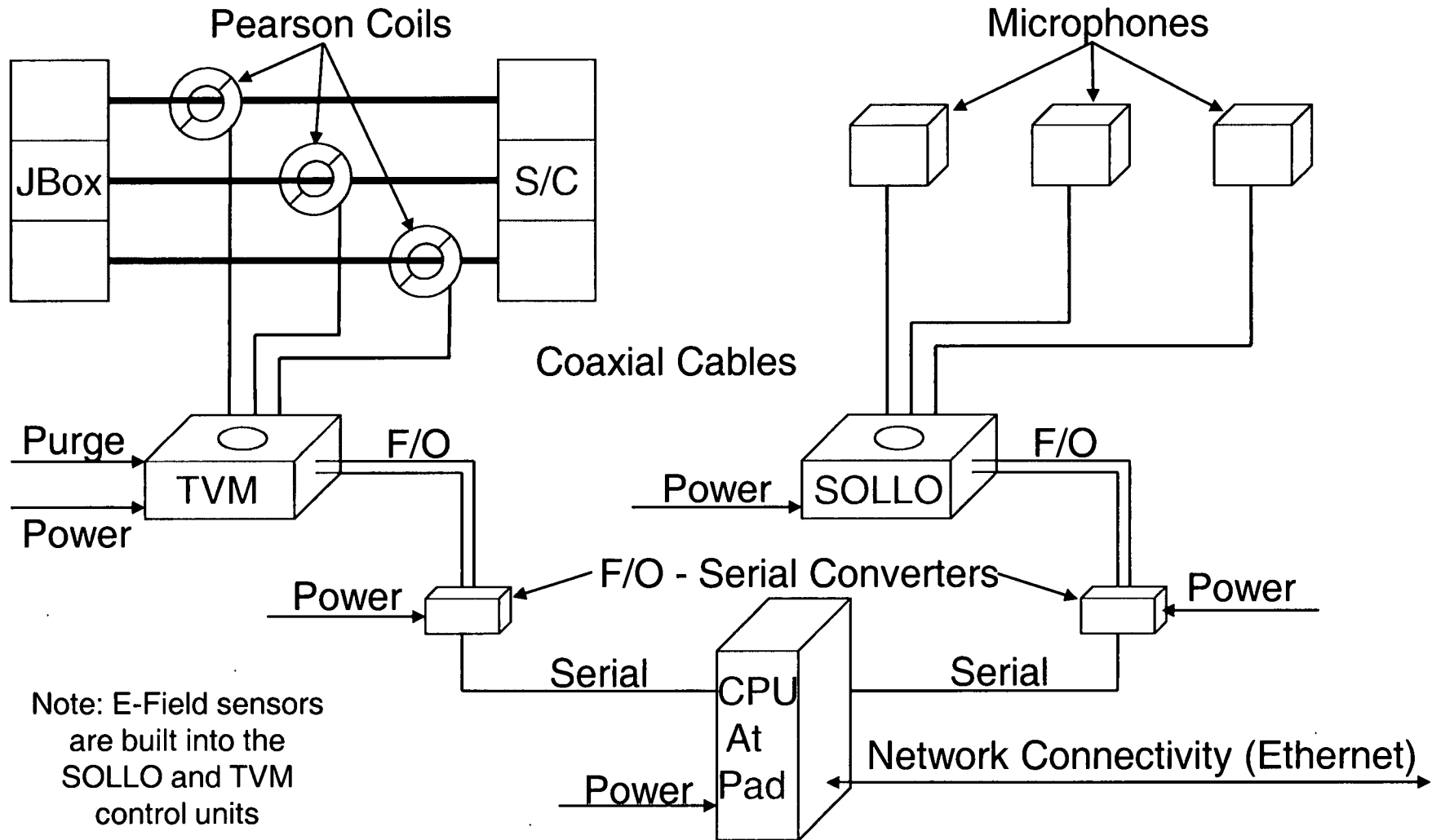
LAUNCH SERVICES PROGRAM

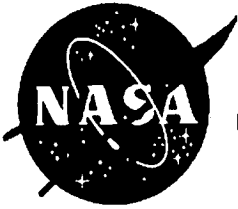
- SOLLO – SOnic Lightning LOcator
 - Consists of a control box and 3 microphones
- TVM – Transient Voltage Monitor
 - Consists of a control box and 3 Pearson coils
- Computer System
 - Consists of a standard desktop platform with 2 fiber optic to serial converters



System Schematic

LAUNCH SERVICES PROGRAM

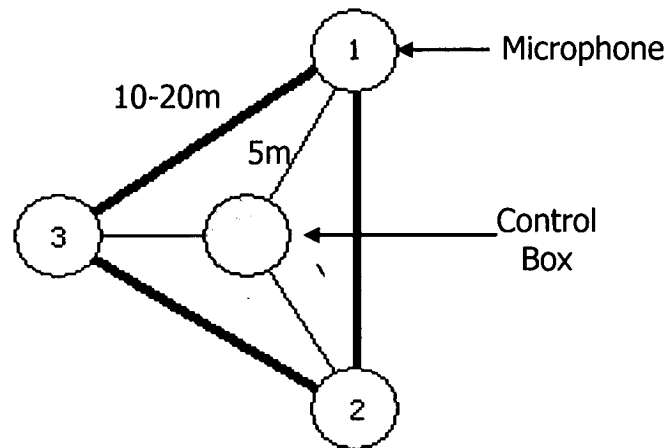




Installation

LAUNCH SERVICES PROGRAM

- SOLLO
 - Should be installed on as flat a space as possible (Microphones all at the same height with minimal interferences)
 - Capability is $\frac{3}{4}$ mile radius around unit
 - For pad 17 at CCAFS, unit is located on the roof of the blockhouse approximately 200 m from the pad
 - Microphones should be setup around control box with a separation of at least 5 meters, preferably 10-20 meters of separation between each microphone



- TVM
 - Pearson coils are installed around Umbilical
 - Control Unit will be in close proximity to umbilicals being monitored (on mast)
- Fibers: 62.5/125 Micron Multi-Mode with ST connections



SOLLO Requirements

LAUNCH SERVICES PROGRAM

- Size
 - Control Unit: ~40cm x 45cm x 15cm
 - Microphones: ~30cm x 35 cm x 30 cm each
- Power
 - 105-125 VAC 47-420 Hz
- Data
 - 3 Coaxial Cables from Microphones
 - 2 Fiber Optic Lines to F/O – Serial Converter



TVM Requirements

LAUNCH SERVICES PROGRAM

- Size
 - Control Unit: ~40cm x 45cm x 15cm
 - Pearson Coils: Installed around umbilical being monitored
- Power
 - 105-125 VAC 47-420 Hz single phase
 - GN2 Purge Line – This was a Delta II pad specific requirement due to location on the Fixed Umbilical Tower (FUT), specific Ariane requirements will need to be determined
- Data
 - 3 Coaxial Cables from Pearson Coils
 - 2 Fiber Optic Lines to F/O – Serial Converter



Computer Requirements

LAUNCH SERVICES PROGRAM

- Size: Standard Desktop Computer
 - Computer: ~43cm x 43cm x 18cm
 - F/O-Serial Converters: ~7.5cm x 13cm x 4cm each
- Power:
 - Computer & Monitor
 - 2 at 115/230 VAC 50/60 Hz
 - SOLLO Fiber Optic Receiver
 - 100-240 VAC 50/60 Hz
 - TVM Fiber Optic Receiver
 - 100-240 VAC 50/60 Hz
- Data
 - 2 Serial lines from F/O – Serial converter to CPU serial port



- Data can be checked by:
 - System Computer
 - No further connections required
 - Remote Desktop into System Computer
 - Requires network connection from system computer to remote location
 - Allows the user to monitor the system from a remote location off the pad
 - Allows multiple users to monitor the system (only 1 at a time)